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PHYSICAL EDUCATION IN THE CONTROL AND PREVENTION OF CARDIOVASCULAR DISEASES IN OLDER ADULTS

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ABSTRACT

Consistently shows that moderate-intensity aerobic exercise is an effective preventive and therapeutic strategy. Epidemiological studies and randomized controlled trials demonstrate that structured physical activity reduces blood pressure, improves lipid profiles, and lowers the risk of major cardiovascular events. Safe and progressive routines, tailored to individual capacities, include activities such as brisk walking, cycling, and swimming, which are both accessible and sustainable for older populations. Beyond physiological effects, exercise enhances independence, quality of life, and longevity. The evidence highlights the central role of physical education and structured aerobic activity in promoting cardiovascular health and preventing disease progression in the aging population.

Keywords: Cardiovascular Diseases. Older Adults. Aerobic Exercise. Hypertension. Cholesterol. Physical Activity. Longevity. Preventive Health.

1 INTRODUCTION

Cardiovascular diseases (CVD) remain the leading cause of morbidity and mortality worldwide, with older adults particularly vulnerable due to age-related physiological changes, sedentary behaviors, and the cumulative impact of risk factors such as hypertension, dyslipidemia, and obesity. Epidemiological evidence demonstrates that structured physical activity plays a crucial role in reducing the prevalence and progression of cardiovascular risk factors, particularly through moderate-intensity aerobic exercise. Activities such as brisk walking, cycling, and swimming, performed at least 150 minutes per week, have consistently been associated with reductions in systolic and diastolic blood pressure, improvements in lipid profiles, and enhanced overall cardiovascular fitness in elderly populations (Pescatello et al., 2019; Cornelissen & Smart, 2013).

The antihypertensive effects of aerobic exercise are well-documented. Meta-analyses of randomized controlled trials indicate that regular moderate-intensity aerobic training can reduce systolic blood pressure by 5–7 mmHg in hypertensive individuals, a magnitude of reduction comparable to pharmacological interventions in some cases (Cornelissen & Fagard, 2005). Similarly, aerobic exercise promotes favorable changes in lipid metabolism, including increases in high-density lipoprotein cholesterol (HDL-C) and reductions in low-density lipoprotein cholesterol (LDL-C) and triglycerides, which are directly linked to lower risks of atherosclerosis and coronary heart disease (Kodama et al., 2007). These improvements are particularly relevant for older adults, in whom pharmacological treatment often requires careful monitoring due to polypharmacy and comorbidities.

Epidemiological studies further support the protective role of habitual physical activity against cardiovascular events and mortality. Longitudinal cohort studies, such as the Harvard Alumni Health Study and the Cardiovascular Health Study, demonstrate that older adults engaging in regular physical activity have significantly lower risks of myocardial infarction, stroke, and cardiovascular mortality compared to sedentary peers (Hakim et al., 1999; Gregg et al., 2003). Importantly, these benefits are not limited to vigorous exercise but are also evident with consistent engagement in moderate-intensity activities performed regularly, underscoring the importance of accessibility and sustainability in public health recommendations for aging populations.

Safe exercise prescription for older adults requires consideration of individual fitness levels, comorbidities, and functional capacity. Guidelines from the American College of Sports Medicine recommend gradual progression of aerobic activities, beginning with shorter bouts of 10–15 minutes and progressing to 30–60 minutes per session, with an emphasis on monitoring perceived exertion and ensuring adequate warm-up and cool-down phases

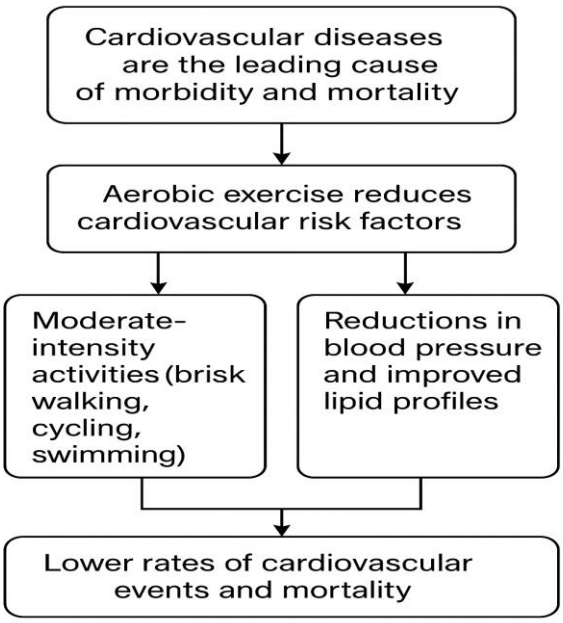
(American College of Sports Medicine, 2021). Combining aerobic training with flexibility and light resistance activities further enhances musculoskeletal resilience, reduces fall risk, and promotes adherence by diversifying routines. Group-based programs, community walking clubs, and supervised classes have shown effectiveness not only in improving cardiovascular health but also in enhancing psychosocial well-being, motivation, and adherence (Chodzko-Zajko et al., 2009).

Beyond physiological benefits, regular engagement in aerobic exercise contributes to broader dimensions of healthy aging. Improved cardiovascular efficiency enhances functional independence, allowing older adults to perform activities of daily living with less effort, while reductions in blood pressure and cholesterol mitigate the progression of chronic disease and extend life expectancy. Moreover, the psychological benefits of exercise, including reductions in anxiety and depressive symptoms and improvements in cognitive function, further reinforce its role as a holistic strategy for longevity (Taylor et al., 2004).

The flowchart summarizes the article by illustrating how cardiovascular diseases remain the leading cause of morbidity and mortality and how aerobic exercise serves as an effective non-pharmacological intervention to reduce risk factors. It shows that engaging in moderate-intensity activities such as brisk walking, cycling, and swimming lowers blood pressure and improves lipid profiles, which in turn decreases the likelihood of cardiovascular events and mortality among older adults. This visual representation highlights the central role of regular, structured physical activity in promoting cardiovascular health and longevity.

Figure 1

Aerobic Exercise Benefits for Cardiovascular Health in Older Adults



Source: Created by author.

In conclusion, moderate-intensity aerobic exercise represents a safe, effective, and evidence-based intervention for the prevention and management of cardiovascular diseases in older adults. By lowering blood pressure, improving lipid profiles, and reducing overall cardiovascular risk, regular physical activity emerges as a non-pharmacological cornerstone of healthy aging. Public health strategies should prioritize the promotion of accessible, community-based physical activity programs, supported by professional guidance, to ensure long-term adherence and maximize benefits for cardiovascular health and longevity.

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